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 12 October 1970
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MEMORANDUM FOR: Executive Director, National Photographic Interpretation Center

THROUGH : Chief, Production Services Group, NPIC *S. J. 15 Oct 70*
 Chief, Technical Services Group, NPIC *June 10/15*

SUBJECT : Status Report on ExDirector's Request of February 9, 1970, Copy Attached as Attachment (a)

REFERENCES : (a) Centers Routing Slip, 3 February 1970, Request for R&D Investigations Concerning PSG
 (b) 18 March 1970, ADP and Materials Handling Requirements
 (c) NPIC/TSG/RED-205-70, 9 September 1970, ADP and Materials Handling Requirements
 (d) PSG-162/70, 6 October 1970, ADP and Materials Handling Study Team

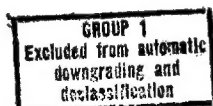
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1. The purpose of this paper is to appraise you of the background and progress made concerning your request of 3 February 1970 (ref. a) with respect to that portion of the request that pertains to the distribution support area, specifically those functions that come under the purview of PSG/R&RD. Additional analysis and planning is being given to your request for considerations in the publications area. Up to this time, our major effort directed toward the publications field is, of course, for the procurement of the equipment for the development of advanced editing concepts. We are also conducting an in-house analysis in conjunction with PSG personnel to determine other areas where R&D equipment developments could improve the publication process. We will report on this aspect of our R&D effort at a later time. However, this memorandum deals primarily with PSG/R&RD requirements in the distribution and ancillary support areas.

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2. The problem of handling and controlling materials and non-computerized information is an area where RED has been concerned and actively working for quite some time now. Our most recent effort began during the last quarter of 1969; however, your comments in February added impetus to this activity. At the request of C/PSG, R&RD/PSG prepared a paper requesting support jointly of AID/PSG and RED/TSG in addressing areas of concern to R&RD (ref. b). As a result of the R&RD requirements

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paper (ref. b), I designated [] as RED's project officer to address R&RD's requirements and recommend any appropriate action. Since that time [] in conjunction with other RED personnel, has spent a considerable portion of his time in evaluating the R&RD stated requirements, personally reviewing, and discussing the major portion of the R&RD activities with R&RD personnel in an attempt to come up with an RED evaluation of the R&RD problem areas and determine where we could make the most significant contribution to increasing the long term effectiveness of those functions now embodied in the R&RD operations. As may be noted from examining the R&RD requirements paper, the reference and library services are an extremely complex operation, frequently leading one to misleading analysis unless they go into sufficient depth to fully grasp or understand the problem--a very tedious, time consuming process at best.

? 3. The results of our analysis were presented to the Chief, PSG, in a preliminary briefing and again in a similar but revised briefing on 16 September and in a memo of 9 September 1970 (ref. c). The quintessence of our position is that we feel that there is a sufficiently deep and complex interrelationship in the R&RD operation to warrant an overall analysis. Of significance is that any effective long term solution must address not so much their current problem areas, but their future requirements as projected with the advent of [] or envisioned in an EOI environment. While isolating and correcting individual problem areas is of immediate concern, only an integrated overall plan, based on sound analysis and understanding of future requirements, is going to produce maximum achievable effectiveness. Our plan would be to identify the immediate problem areas and prescribe ad-hoc solutions consistent with an overall integrated plan.

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? 4. As a result of reference c, and the 16 September briefing, the Chief, PSG, decided that he would like to have a composite group of PSG, PPBS and TSG personnel review the R&RD requirement document along with RED recommendations. The charge for this group is described in reference d. The study team is composed of []

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[] As a result of the establishment of the study team, it is necessary that we go into a holding pattern regarding the funds allocated in support of the R&RD/PSG operation. Our original estimate for the expenditure of these funds, estimated at [] was October 1970 and then subsequently reprogrammed

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to December 1970 as a result of the preliminary briefing noted above.
We will have to await the recommendations of the study group and the
Chief, PSG, position prior to establishing a new R&D time schedule.

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Chief, Research & Engineering Division,
NPIC/TSG

Attachments:

- a. Reference (a)
- b. Reference (d)

Distribution:

- Cy 1 - NPIC/ExDir.
- 2 - NPIC/PSG
- 3 - NPIC/TSG
- 4 - NPIC/TSG/RED
- 5 - NPIC/TSG/RED/SRB

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FROM

DATE

TO		INITIALS	DATE	REMARKS
DIRECTOR				<p>1-2 FYI</p> <p>I should like some serious investigation of R&D which might be enclosed in for the purpose of enhancing PSG's capability in the publication and distribution and like support areas, manpower, services, using FY 71 & FY 72 funds.</p>
DEP/DIRECTOR				
EXEC/DIRECTOR	(2)			
SPECIAL ASST	(1)			
ASST TO DIR				
ASST TO DEP/DIR				
CH/PPBS	3			
DEP CH/PPBS				
EO/PPBS				
CH/IEG				
DEP CH/IEG				<p>for the purpose of enhancing PSG's capability in the publication and distribution and like support areas, manpower, services, using FY 71 & FY 72 funds.</p>
EO/IEG				
CH/PSG	4			
DEP CH/PSG				
EO/PSG				
CH/TSSG	5			
DEP CH/TSSG				
EO/TSSG				
CH/SSD/TSSG				
PERSONNEL				
LOGISTICS				<p>for the purpose of enhancing PSG's capability in the publication and distribution and like support areas, manpower, services, using FY 71 & FY 72 funds.</p>
TRAINING				
RECORDS MGT				
SECURITY				
FINANCE				
DIR/IAS/DDI				
CH/DIAXX-4				
CH/DIAAP-9				
CH/SPAD				

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PSG-162/70
6 October 1970

MEMORANDUM FOR: Chairman and Members, PSG/R&RD Study Team

SUBJECT : ADP and Materials Handling Study Team

1. The purpose of this study team is to investigate the ADP potential and materials handling procedures within PSG/R&RD. Toward this end and with an eye to the future, R&RD has prepared a paper, "ADP and Materials Handling", noting in some detail areas where they feel study and assistance are required. This paper is to be the basis to this investigation.

2. I will expect you to review the memorandum and investigate the areas of concern noted in the paper.

3. I will expect the following results from your investigation:


a. Identification of the areas noted in the R&RD memorandum where in the opinion of the study team the problem areas indicated are not sufficient to warrant change, or where ADP will not make a significant contribution; that is, the present procedures are sufficient for now and in the future.

b. Also identify those areas that in the opinion of the study team do need examination and probably procedure change, but can be adequately investigated by Center resources.

c. Identify those areas that in the opinion of the study team will require investigation and study by activities outside of NPIC.

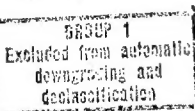
d. Additional areas or points of comment will be welcome.

4. A progress report is requested in about one week so a realistic completion date can be discussed.


Chief, Production Services Group

Distribution:

- Orig. - Chairman
- 1 - Ea member
- 1 - NPIC/Exec Dir
- 1 - NPIC/PPBS
- 2 - NPIC/PSG



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18 March 1970

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MEMORANDUM FOR: Chief, Automated Information Division, PSG
Chief, Research and Engineering Division, TSSG

THROUGH: Chief, Production Services Group, NPIC

SUBJECT: ADP and Materials Handling Requirements

I. GENERAL

A. The purpose of this paper is to furnish the Chief, Automated Information Division and the Chief, Research and Engineering Division/TSSG with background information relating to the Research and Reference Division/PSG (R&RD) needs for ADP hardware, software and materials handling systems for the present and near future.

B. The Research and Reference Division is composed of five Branches that are concerned with handling, storage, retrieval, and disposition of materials as well as the problems of record keeping, reporting, and file management. These materials include maps, charts, books, documents, cables, roll film, chipped film, plots, machine print-outs, microfilm and many other items. In the past, each Branch individually has attempted to seek its own equipment, ADP support, and/or new methods in order to solve the problems of that Branch. Although new methods have been employed in many areas, the research and development of equipment or ADP services performed by each Branch has been limited for two basic reasons. The first and foremost reason is that each is confronted with the task at hand on a day-to-day basis which leaves very little time to test and evaluate "on the shelf" items that may solve unique or particular needs. Secondly, the experience and contacts which must be maintained in order to deal with private contractors of equipment or software packages has been extremely limited.

C. To produce this paper a survey of each Branch was undertaken in order to present the problems associated with the handling of source materials, the records that must be kept on those materials, the products that must be generated, and finally to enable us to solicit ADP and R&D support wherever it seems practical. The survey revealed several areas in common relative to the ADP control of the materials for which the Division is responsible. These are:

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Excluded from automatic
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1. Circulation Control
2. Content identification, storage and retrieval
3. Notification to users
4. Management information:
 - a. Project start - finish
 - b. Inventory control
 - c. Security control
 - d. Budget maintenance

D. These areas are important because it should be possible to construct machine programs or buy already developed hardware which can be used by different components for different materials. For instance, a circulation control program for documents in the library should be usable for cans of film or maps or any other materials being charged out for specified periods of time.

E. The materials handling aspects of the Division are so diversified that it is difficult to offer a summary in this space. To state the obvious, the problems lie in three major areas.

1. Movement and control into the building
2. Movement and control within the building
3. Movement and control out of the building

Of the three we are primarily concerned with the movement and control of materials within the building, particularly film, documents and other mission support items. Our main objective is to improve the efficiency in getting the materials to the analyst which will facilitate the ease of production and improve the product for which he is responsible. Specific programs will be discussed within the framework of the individual Branch summaries which follow.

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F. The attached chart depicts the Research and Reference Division structure and copies of the questionnaire and individual Branch responses to it will be made available on request.

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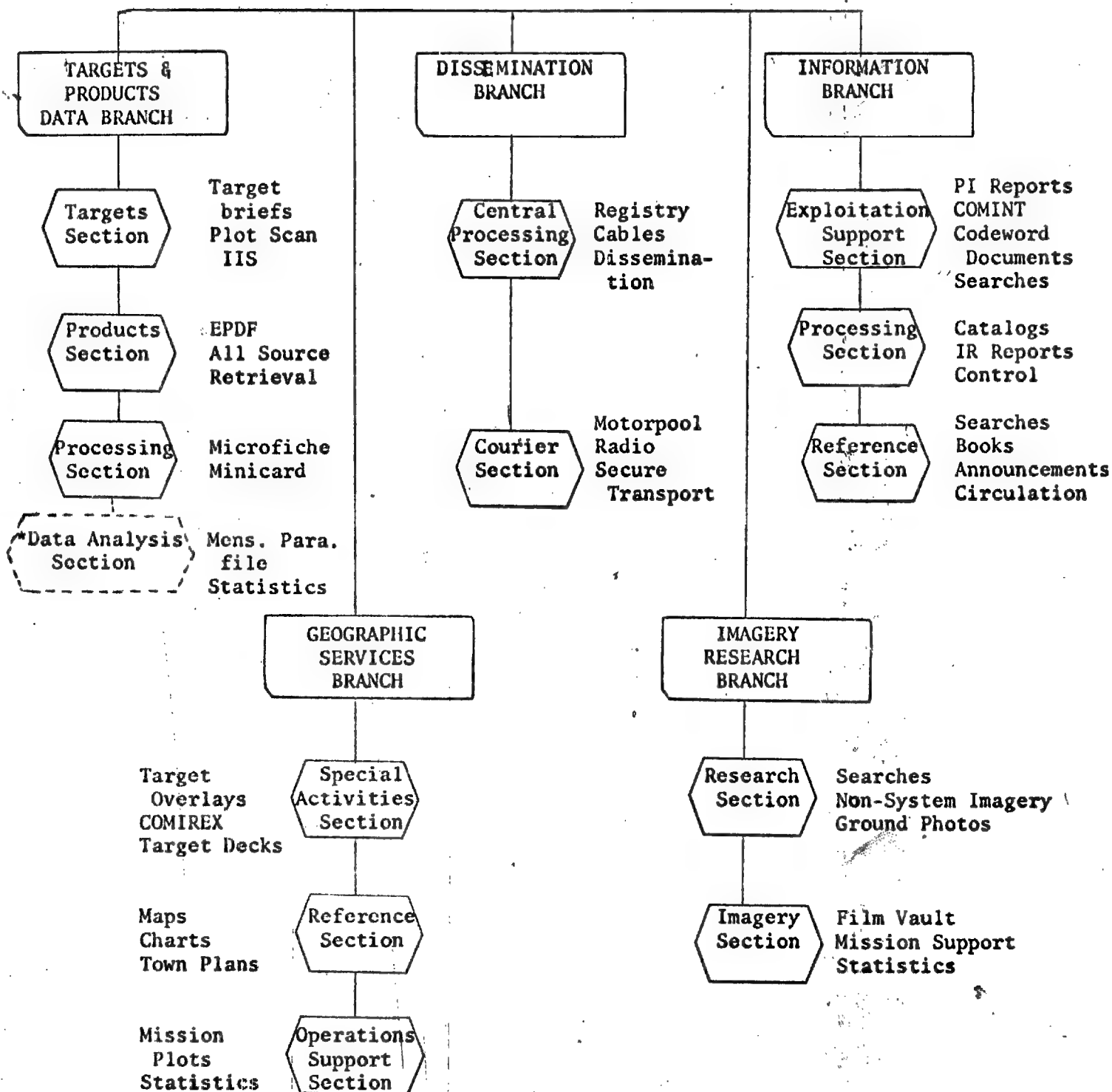
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II. IMAGERY RESEARCH BRANCH

A. This Branch is responsible for the research, procurement, dissemination, control and storage of all system and non-system imagery utilized by NPIC. The magnitude of the handling and control problems involved in this effort can be shown by the statistics reported for the month of February 1970. During the month 1,116 missions were received which represents 1,641 cans of film. Almost all of these were DOD missions and no KH film was received during the month. In response to 4,846 individual requests, 7,796 cans of film were charged out. [] received 280 cans of KH material, and two truckloads of film were sent to the processing site for destruction. In addition, 263 cans were recalled from the Records Center by requesters. Machine listings were sent to IAS, IEG, TSSG, DIAAP and SPAD identifying individuals who have film charged out. These listings covered approximately 2,500 cans of film which have been charged out for 60 days or longer. In addition 11,175 exposures were retrieved from external repositories in response to research requests from IEG and others.

B. In addition to services involving film procurement and loan, the Branch also disseminates film according to COMIREX directives, compiles film accession lists and reports pertaining to film holdings, security, origin of imagery and other statistical information as required. The Branch is also charged with maintaining area coverage files of satellite imagery in the form of photo plots, and for conducting searches of indexes to imagery maintained in DIA and elsewhere.

C. Present range/limitations

1. Limitations to the present system of security and accountability of film stem from the manual and limited machine systems within which the work must be accomplished. Pre-mission management information is also lacking. Accountability of loaned film is maintained by means of a manual card index system. The system shows whether or not the film is in storage, and if the film is out on loan, who is charged with it. In an OAK exercise when many rolls are assigned to a PI area, the area coordinator signs for all of the cans in his area of responsibility. There is no effective way at present to account for film while it is spread out among individuals in a PI area, or to account for film

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passing between PI areas. This system leads to further difficulties when searching for film after the OAK has been completed. Inventory control is virtually impossible, and a manual search of the index or files is required for nearly all requests.

2. The second major area of limitation is in the retrieval of references to photography covering particular targets or areas. There is no single standard of reference for all types of imagery. NPIC maintains hard copy reports of all system mission plots filed in mission number sequence and is in the process of assembling a file of this material photographed on 70 x 100 MM film chips and filed in WAC order. The DIA has computer programs which can generate pin-point or "search area" coverage, but requests usually take from 3 to 5 days to answer. In addition, the program apparently has not been fully de-bugged and several instances of incomplete references have been noted in recent requests for coverage. While requests for coverage of NPIC and COMIREX targets can usually be answered by using the target brief file, there are still gaps in the total range of targets represented in the DIA Automated Intelligence File (B.E.), and the Center's Target Brief Collection. The major problem area involves the growing number of area search targets which are now in the COMIREX deck. As of this writing there are 251 area search targets ranging from 5 NM to 100 NM from center, which must be scanned on every mission. If new or changed installations are detected, negation of this information requires a retrospective search of all available imagery. Needless to say, a very large number of PI man-hours are wasted because of the inadequacy of the present retrieval systems. It is highly unlikely that DIA will be able to resolve this problem for NPIC especially in the time left before implementation of the [REDACTED]

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D. ADP Requirements

1. A computer based system of inventory and accountability control is needed with data entry and display consoles available to the film library and with request/reply interfaces available to the operational PI areas. The system should have the capability to account for frames cut from individual rolls as well as a film destruction and retirement accountability system. In addition, a capability to supply management type information derived from mission telemetry should be developed in order to speed up the film breakdown effort, both at the processing site and after missions arrive at NPIC. Dividing the film cans among the various responsible components of IEG, is now a cumbersome and time consuming effort.

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2. A computer based listing/graphic retrieval and display system for determining references to all types of imagery is highly desirable. The minimum requirement is to investigate the procurement of DIA tapes of the Area Coverage File for use on NPIC computers or a Rapid Search type machine, preferably in an on-line mode. A possible alternative (if security limitations can be waived) is a data communications link with DIAAP-10 for faster retrieval of references to pin-point an area coverage.

E. Materials Handling Requirements

1. The recent addition of full-space automatic storage files to the film library has offered a vast improvement in the storage capacity of the area and has improved the handling of film cans through the sheer efficiency of the system. However, there is still much room for improvement. There is a requirement for studying the film can labeling process as well as one for the labeling of film chips (especially anticipating the implementation of the [redacted]). The various storage media-cans, rolls, chips, whole frames, partial frames, etc. should be investigated. The need for improved internal film distribution equipment (conveyors, carts, pneumatic tube systems etc.) should also be reviewed. There is no doubt that a study of the traffic flow within the first floor area connecting the loading dock and film vault would reveal a need for rearrangement of that space. In short, this area along with the Dissemination Branch are the most critically in need of detailed analysis.

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III. GEOGRAPHIC SERVICES BRANCH

A. The Geographic Services Branch is responsible for providing geographical reference services and products in support of all phases of exploitation of photographic and other imagery products. This involves the operations of a map and chart repository; the preparation of special graphic and bibliographic aids to assist the photo interpreter; the research, compilation and maintenance of target overlays and dossiers on all COMIREX targets designated for collection; the preparation of geographical position indexes, plots and special graphics delineating cloud cover and other limiting factors. It also involves all in-house film editing to determine security classification and decontrol.

B. Present range/limitations

1. The main limitations encountered in GSB are similar to those of the other Branches, particularly relative to circulation and inventory control of maps, charts, etc. Although accessions lists are produced on a regular basis, little has been accomplished to automate the dissemination of geographic intelligence in response to reader requirements. All of the above should fit within the framework of a general information/circulation/inventory control program. In addition, there are several specific files which require further ADP support. These are discussed individually within the next section which follows.

C. Satellite Reconnaissance Coverage Statistics

1. Statistics are compiled on each KH mission showing the mission number, camera, date and time of photography (GMT), country coverage, pass number, linear nautical miles, square nautical miles, and total coverage for the mission. These statistics are measured from the mission overlays and calculated manually. This information is entered on a coding sheet and sent to AID for punching, and sorting. It is compiled on the UNIVAC DCT 2000 by using a FORTRAN Program. The statistics are stored on IBM cards and include coverage of all KH missions up to the present time. These statistics are worked up on a mission to mission basis and are not used as an input to any other file of activity requiring ADP support at the present time.

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2. ADP support is requested to reduce the number of man hours required to manually compile these statistics. ADP support is also needed to receive the [] transmitted over the DLT 9300 which gives us the cloud cover conditions. The merging of these two files should serve as an index to vehicle performance, areas delineated for exploitation, and as a historical record.

how
used?

D. DOD Grid Square Coverage Report

1. This file is used to provide recipients with geographical photo coverage reference for Southeast Asia. It is required for flight planning and to record cumulative coverage for specific time periods for the COMIREX. This report is transmitted via cable to DIA, CINCPAC, 548RTG FICPAC, CINCUSARPAC, PEC FUCHU AS, CINCSAC, 544 AEROSPTECHWG, and FICPACFAC. The IBM card deck is sent to ICRS.

2. Mission photography is plotted on 1:1,000,000 WACs showing areas of cloud free coverage for the mission. The mission recording system ephemeris is received through AID on the DLT which is used along with the photography to plot the track. The grid square is overlaid on the plots and the information is transferred to the coding sheets for key punching. ADP support is requested to expedite handling of the incoming transmission of the MRS ephemeris over the DLT 9300 which is needed for this work effort. ADP support is also required to produce the IBM card deck containing the WAC number, 200/50 sheet number, 3 mile square designator, and year, month, day of acquisition. The same information is also produced on a five channel paper tape used for the outgoing cable.

E. Preliminary Mission Coverage Plots of the KH-4 []

1. These plots and the MCS report are used as a graphic reference by all recipients on a mission by mission basis and are not used as an input to any other file of activity requiring ADP support. The source data, however, contains input to the mensuration parameters file. The plots provide mission support for film breakdown, IEG readout support, base plots for the Mission Coverage Statistics publication and coverage information for the rest of the community. They are disseminated to DIA, CIA, and TOPOCOM and have extensive NPIC internal dissemination.

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2. Preliminary MCP overlays are compiled to fit 1:9,000,000 and 1:15,000,000 scale base maps. These plots are prepared by AID on the [] Plotter from the input of [] and [] for the KH-4. These data are received in cable form over the DLT 9300. ADP support is requested to reduce the number of man hours required to manually compile these plots and provide a more accurate product. } what?

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F. Composite Map Index File

1. This is a specialized file designed to produce an index depicting a select group of maps and charts covering targeted WAC areas. Data is derived from various map catalogs, indexes and associated production progress reports. This information is incorporated in a punched card file maintained by R&RD/GSB. References obtained from this file are submitted to AID for input into the 9,000 basket of the Target Brief File. They are also used in the preparation of COMIREX map packets.

2. ADP support is requested to complete the programming which is now underway and to investigate the feasibility of including this file as a part of the on-line integrated information system.

G. Materials Handling Requirements

1. There are several areas within the Geographic Services Branch which offer fertile ground for a materials handling survey. Among these are better procedures for map handling, filing and especially folding. Most of the maps in the collection are stored in archives boxes and all incoming new editions must be folded. This is a very time consuming task and one which has caused major morale problems in the Branch.

2. Another problem involves the Target Dossier File which must be maintained for use during the OAK. These dossiers contain up-to-date information and maps relative to each target in the COMIREX deck. They must be maintained in duplicate in the event of overlapping KH-4 [] missions and the present file contains 11,460 individual packets. This represents about 68,760 maps, target briefs and other materials each of which must be handled and/or updated with each incoming mission.

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3. Finally, the facility for storing and processing the maps should probably be investigated to determine whether a full-space type of environment would prove to be more efficient than the present shelving arrangements.

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III. TARGETS & PRODUCTS DATA BRANCH

A. This Branch has been designated as coordinator of the National Imagery Data Base Installations Data File and the Exploitation Products Data File. The management and operations of these files have already been established within NPIC.

B. Installations Data File: A national file of information extracted from imagery (primarily 1st and 2nd phase) in relation to a predetermined list of targets.

1. Present range/limitations: This file (the NPIC Target Brief File) will be revised under the provisions of the Integrated Information System (IIS) which is projected to become operational this year. The future of the file and the posture of the NPIC rely on the capabilities of the IIS.

2. ADP Requirements: All requirements (both national and departmental) have been stated and approvals granted. The IIS is expected to satisfy these requirements.

C. Exploitation Products Data File: A national file of information indexed from imagery exploitation products produced or received by NPIC. Both shallow and in-depth classification schemes are used to control the file. The shallow index is utilized to satisfy requirements for published monthly and annual listings of imagery community products. The in-depth scheme is used for complex retrospective searches of specified subjects not available in the shallow index. The reports and other products are stored in hard copy and on Microfilm. The microfilm file is used to supplement or replenish the holdings of any component within the intelligence community.

1. Present range/limitations: This file (the All Source Index and the Minicard System) is to be revised under the provision of Project [redacted] November 1968, which is awaiting software development for implementation. Projected completion date is unknown at this time.

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2. ADP Requirements: Implement [] to improve the generation of formal publications and work listings; to improve retrospective search capability; and to expedite microfiche processing. An alternative to solve many of the present programming problems relative to this file is a detailed study of the use of the Rapid Search machine now in use at Headquarters. We feel strongly that this machine would eliminate most programming requirements and it could be used to search all of our other tape stored files including the Target Briefs, MIS and eventually, the DIA Area Coverage tape file.

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D. Materials Handling Requirements: The implementation of [] which outlines the processing of microfiche is limited to one file to be maintained in a manual mode. If other files are to be added to the system or if input or service increase, modern methods of automated retrieval, packaging, and presentation will be required. *Why?*

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IV. INFORMATION BRANCH

A. This Branch includes the Library and is tasked to maintain many types of physical files and reference facilities. In addition, the Branch has been required to perform research activities for all of the components within [redacted] Four of the most important files are cited as examples of the problems this Branch faces.

B. Index to periodicals: This is an internal Branch file with data recorded about periodical subscriptions currently received in NPIC and containing routing, processing and purchase information. It is a punched card system used for budgetary purposes in the annual CIA subscription renewal survey.

1. Present range/limitations: Only limited information is available on punched cards for 700 subscriptions, allowing a sort by publication title and receiving office. The major limitation is due to lack of space on the cards. Because of this:

a. Price is not shown; overall costs must be compiled manually.

b. Routing information is restricted to 3 offices per copy and can be broken down only to Division level. Name of individual is not shown.

c. No copy numbers are shown.

d. Codes must be used to indicate frequency, country, retention policy, holdings, subject, where abstracted, etc.

e. Different formats are used for the NPIC listing and the CIA library master listings. In the annual subscription renewal survey, listings are received from CIA/Acquisitions Branch broken down by the geographic area of procurement, (WE, FE, USSR/EE, etc.). Work from this requires the use of 2 master lists, since the NPIC index cannot be sorted in this manner.

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2. ADP Requirements: An ADP system is needed to provide a full master list with all the data elements included in full text without codes. The ability to show routing should be included. Flexibility in the format of printouts would be valuable. For example, a listing by geographic area corresponding to the renewal listings received from CIA would be much more useful. For monitoring the book budget a format to display cost figures on total expenditures as opposed to those of each office would be helpful. Another format would allow the library holdings to be published and distributed.

C. Top Secret/Codeword Document File: This is a specialized file of system and non-system photo interpretation reports, finished intelligence reports, Comint and related other reports from USIB members, foreign sources and domestic contractors. Dates of coverage vary with type of material: NPIC and CIA reports 1953 to present, other types generally 1963 to present. The file is used by NPIC interpreters and analysts and about 20,000 items are lent annually. Externally located USIB agencies are served on a limited basis.

1. Present range/limitations: Currently ADP methods are used to provide a circulation control system only for photo interpretation reports. Punched cards are produced from All Source Input Sheets, and taken to PSG/AID. AID produces a master card and one or two copy cards as appropriate, plus labels for document file jackets. A proof listing is printed for each deck processed. These items are brought together in the Information Branch and reports are jacketed for filing. This system is operated in conjunction with:

a. Dissemination Branch/R&RD - Dissemination support, security control, and supplemental distribution support.

b. AID - Machine time for listings, sorts, labels:

c. Targets & Products Data Branch - Minicard reproductions, indexing, all source listing.

2. Limitations imposed are:

a. A dual circulation control system. All PI material prior to 1966 and all other unindexed materials are controlled by a manual system using the Library form 1395. From 1966 to present, ADP methods have been used as a circulation control medium.

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b. Only PI reports are indexed for computer processing control and retrieval of non-PI reports is increasingly important because of the extensive use of photography to produce finished intelligence.

c. No keypunch capability exists within the Information Branch.

d. No internal control over incoming work flow from other components.

3. ADP Requirements: Further support is needed to provide the following:

a. Improved circulation controls. Card formats designed for more information.

b. Faster handling. Reports will be processed within two days and in file as opposed to delays of up to two weeks at present.

c. Increased accuracy. Cards will be verified after punching.

d. Reduce clerical procedure. Will eliminate repetitive searches thru reports which are stored in the Section awaiting all-source input sheets.

e. Improved research capability. All incoming material with the exception of FMSAC cables and NSA Comint will be listed as opposed to partial listings now available.

4. Materials Handling Requirement: New and better methods of handling hard copy and microform copy of documents in an integrated ADP environment must be explored.

5. Other: Coordination of dissemination support (DB) supplemental distribution controls and associated security requirements for 'system' materials.

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D. Non Code-word Intelligence Document Index: The Intelligence Document Index is a listing of intelligence studies and classified periodical titles retained in the Branch. It includes only non-codeword, non-PI materials from approximately 320 individual sources including U.S. Government departments, foreign governments, and those organizations issuing reports under government contracts. Two lists are issued weekly for new items received and retained, one arranged by subject and one by originator. The entire file is cumulated at periodic intervals in the above arrangements. These indexes are primarily for use by the staff and provide the only ready access to non-codeword publications available in the Center. This file has been set up primarily to enable the library to service requests from offices and individuals in NPIC. Of the 3,500 reference searches performed in FY 69, about fifty percent required the retrieval of information from classified non-codeword sources. Over 5,000 such documents are pulled and charged out annually.

1. Present range/limitations: The present system has many limitations, imposed primarily by the constraints of the 80-column card:

a. The identification of each item is often meager, leading to confusion and error.

b. Titles are truncated, resulting in faulty identification of publications. This also necessitates an elaborate list of standardized abbreviations.

c. No space exists for anything but an inadequate 2-digit subject code which does little more than segregate documents as dealing with military affairs, politics, etc.

d. In order to identify a specific publication, the searchers must decipher five codes representing originators, classification, area, subject category, and location. This hampers any search and slows down retrieval.

e. The format is not good, identification of columns is limited to the first page of each section, etc. Improvements could be made through the use of punched cards, but they would have to be inserted manually after the sorting has been completed.

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2. ADP Requirements: The proposed change from a system limited to the data on an 80-column punched card to one which uses ADP capabilities will result in the following improvements:

- a. Greatly improved bibliographic control through more precise identification of each item.
- b. The possibility of an expanded but still shallow indexing system;
- c. An improved format which will make the listings easier to use.
- d. Improved ability to retrieve specific items quickly.
- e. Far greater ability to conduct retrospective searches for information.
- f. A considerable saving of the time currently required for manual manipulation of card files.
- g. The ability to expand this system to cover additional intelligence materials not now under proper control.
- h.. The probability of becoming the basis for a charge out system compatible with that used for PI reports.
- i. Announcement lists and notification devices.

3. Materials handling requirement: Methods of managing hard copy reports as well as microform capabilities coupled with ADP services are necessary.

E. Annual Publications File: This is an index to open source subscriptions received in NPIC on a continuing basis. These publications may be quarterly, semi-annual, annual, bi-annual, or adhoc. This file is used entirely within the Branch to record receipt of items and for distribution of copies within NPIC. It is also used in the annual CIA subscription renewal survey.

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1. Present range/limitation: File consists of 5x8 cards filed by title of publication. Major limitations are:

a. Total cost figures needed for budget purposes must be compiled manually.

b. Inability to determine the titles received by each component in NPIC.

c. Inability to sort by geographic area of publication which is how listings are prepared by CIA.

2. ADP Requirements:

a. In order to conduct the annual subscription renewal survey for CIA, the capability is needed to have listings by NPIC component showing items currently being received by that office and the cost.

b. Since prices are constantly changing and the Information Branch is charged with the responsibility of remaining within the allowed budget, the capability is needed to obtain quickly an accurate cost figure of funds obligated for annual publications.

c. An ability to sort by the geographical area is necessary to match our listings with those of CIA.

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IV. DISSEMINATION

A. The Dissemination Branch is responsible for the operation of the NPIC Registry, external courier service, and internal mail service. These processes require that a series of specialized files of control records be maintained at all times. The source materials (documents, graphics, periodicals, and cables) that are processed are voluminous and subject to security accountability.

1. The service provided to all components of [] and to externally cleared members of the intelligence community such as CIA, DIA, Department of State, Executive Office and Capitol Hill, Contractors, and Foreign posts is varied and complex. Some examples of the types of services are listed below.

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a. Receive, sort, control, and distribute all materials received in []

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b. Maintain all dissemination requirements for []

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c. Maintain security accountability records (TS, TCS, [] etc.) for the Center.

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d. Processes all materials designated for release to foreign governments. Prepare machine listings of these items for accountability to the DDI and DDP.

e. Read, disseminate and file cables for the Center.

f. Package and receive documents, graphics and other materials for distribution to the intelligence community.

g. Provide machine runs of reports produced and disseminated by NPIC for use by management in the production control process.

h. Insure that the Agency Archives is on distribution for pertinent items.

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2. Present range/limitations

a. The Dissemination Branch maintains accountability records for magazines and periodicals using a Kardex system. Most other records of documents and graphics are maintained on IBM cards. For those cards which must be listed, the IBM 1050 and UNIVAC DCT 2000 are used. In addition, records must often be run through a card duplicator to provide for cross filing and to produce other listings. This dual system is too slow and as more and more documents are produced in the TK system, faster and better control must be developed.

b. The policy outlined by the Office of Security requires a signed destruction certificate with signatures of two witnesses for all Top Secret and codeword documents that have been destroyed. This policy has usually been adhered to by the Center, but responsibility for control of these records has always been on a decentralized basis, thus, there is no central record of those items destroyed. Proper security practices demand that this be corrected.

3. ADP Requirements: The Dissemination Branch does not maintain a physical file of source materials except for cables, therefore, the primary concern of the Branch is to achieve quick reaction and accurate records of their particular processes. In addition, the Branch is obligated to produce several products (reports/listings) of materials handled and supplemental transactions. The Branch needs one system that will allow all source material records to be placed under one control. This system must be flexible enough to allow for changes, additions, and deletions to these records for security and transport control purposes. Furthermore, this control system should be able to provide all required reports or listings without any additional human intervention.

4. Materials handling requirements: Because this Branch controls packages, and transports thousands of pieces of materials, new methods, equipment, and procedures must be brought to bear if efficiency and

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accuracy are to be maintained. At present, the Branch is utilizing a great variety of storage and processing equipment to do the job. A total integrated materials handling system, coupled with the services an ADP environment could offer, has never been fully researched as it would pertain to present and future requirements. New filing, packaging and mail room distribution equipment now being investigated should be incorporated within this study and, as mentioned previously, the space arrangements and materials flow pattern for the first floor area should be included.

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Chief, Research and Reference Division,
PSG

Distribution:

- Copy 1 - NPIC/PSG/AID
- 2 - NPIC/TSSG/RED
- 3 - NPIC/PSG
- 4&5 - NPIC/PSG/R&RD

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Refc

NPIC/TSG/RED-205-70
9 September 1970

MEMORANDUM FOR: Chief, Production Services Group, NPIC

THROUGH : Chief, Technical Services Group, NPIC

SUBJECT : ADP and Materials Handling Requirements

REFERENCE : Dated 18 March 1970

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I. In response to the referenced paper, which furnished background information relating to your information and materials handling needs, TSG/RED has made a preliminary analysis of the situation. As a result of evaluating the referenced paper, a series of discussions with supervisory personnel in each of the R&RD Branches, and our own understanding of the information needs the Center, the following discussion represents our understanding of the current situation within R&RD/PSG and what action we propose. Specifically, our objective is twofold; (1) To improve the timeliness and effectiveness of inputting, updating, storing, retrieving, and handling non-magnetically stored information, (2) to make cost effective use of automation and ADP services while holding manpower, funding, and space requirements within available resources.

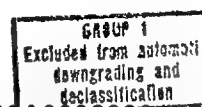
A. Forms of Information To Be Considered--Because of their inter-relationships, we feel that all of the types of information (or materials) addressed below must be considered for an effective analysis of the problem. Additionally, other information handling processes, such as the IIS, must be reviewed to eliminate potential overlaps, but are not addressed as a direct part of the approach described herein.

1. Ground Coverage Photography.

a. Roll--Those forms of mission coverage photography normally stored and handled in roll form.

b. Frame/chip--a single frame or less of mission photography extracted from a roll for handling purposes.

c. Ground--a single or small series of frames of photography obtained from hand-held cameras as opposed to reconnaissance mission coverage.



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2. Microform Film--Photographically recorded information used for information handling as opposed to intelligence acquisition photography.

3. Classified Documents, Reports, Cables--a variety of formal and informal publications requiring special handling.

- a. Top Secret Codeword Publications
- b. Cables and Informals
- c. Non-Codeword Publications

4. Unclassified Publications

- a. Books
- b. Periodicals
- c. Reports

5. Large Format Materials

- a. Ground Coverage Plots
- b. Maps & Charts
- c. Graphics & Briefing Boards

6. Mission Data--that data which is not computer or magnetically stored for a near real time availability.

- a. Target Data
- b. Ephemeris Data

B. Current Situation--It is our understanding from the reference memo that considering past requirements and constraints, R&RD has been able to meet their commitments. Concern is expressed, however, as to their ability to meet future commitments considering the impact without establishing more efficient operating procedures based on a revised requirements base. The following are a few comments characterizing the current situation. Inclusion of comments herein is not necessarily an endorsement that significant changes are required.

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1. Manual Orientation--Automation and ADP support has been applied at a minimal level, even in highly repetitive functions.

2. Collection of Autonomous but Similar Operations--Many of the operations within R&RD are similar "library" or "accountability" functions but each has its own control system.

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3. Registry an Incomplete Function--Considerable effort devoted to registering certain classes of classified information, while little or no effort is devoted to controlling reproduction, transfer of responsibility, or destruction.

4. Production and Use of Microforms and Incomplete Function--R&RD is presently implementing a new totally manual microform system (as a replacement for the Minicard System) based on the external dimensions of a standard 4" x 6" microfiche, but without the internal format control of the Government Standard Microfiche. Additionally, the Information Branch is ordering, when ever possible, Government standard microfiche in lieu of hard copy. The indexing, storage, and retrieval, dissemination, reproduction and general overall use of these and other types of microforms in use within the building is poorly defined and frequently misunderstood by the Center as a whole. In brief, the requirements for Microforms are not clear and/or evident but we are pursuing their use on a ad-hoc basis.

5. Little Coordination of Microform Equipment Procurement--At this time there does not seem to be any coordinated effort for the procurement of optimal microform viewing, printing, or reproduction equipment within the Center. Each Division or Group appears to be striking out on their own as to what type of equipment to buy.

6. Little Room Available for Expansion Brought on by New Systems or Requirements--R&RD, like much of the remainder of the building is feeling the space squeeze. While they currently have adequate space, expanded storage, requirements will be difficult to handle. For example, [REDACTED] will require approximately 10 times the Fullspace file area the current KH-4 missions are requiring; as projected on an annual basis with the current retention policies.

C. Major Requirements--Based on an analysis of the referenced paper and our additional preliminary investigations, we feel we can summarize the stated R&RD needs into the following ten requirements categories for further consideration.

1. Automated Film Accountability System
2. Automated Registry (Accountability) System
3. Improved Library & Reference System
4. Improved Film Coverage, Index & Search Capability
5. Integrated Microfilm System

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6. Improved Target File Maintenance & Handling
7. Improved Film Handling
8. Improved Map Handling
9. Improved Reference Material Handling
10. Improved "Mail" Handling

D. Major Functional Areas--All of above ten requirements fall within three functional fields or areas of specialization. Each of the branches or operations within R&RD are affected to varying extents by these functional areas, however, each unit has responded somewhat differently accounting for a variety of approaches to similar problems. These functional areas are:

1. Reference, Index & Search--a problem of knowing the content of your inventory and how to locate or index it in an efficient manner.
2. Record & Material Accountability--primarily an inventory control situation.
3. Materials Storage, Retrieval, and Handling--the physical storage and handling problem of your inventory.

E. Major Considerations--At this time we have been unable to analyze and validate specific problem areas or requirements where we can recommend specific R&D developmental programs. There are several areas where Ad-Hoc solutions are possible, however, without the necessary considerations and planning they may be ineffective in the long run. This is not to say that there are no problem areas in R&RD or that these operations can not be effectively improved through R&D, but only that we were not able to adequately identify and define them to recommend developmental action. Some of the major considerations that must be studied in depth in arriving at either developmental or new operational concept plans are as follows:

1. Need and Use of Information--To what extent are the current information and handling services of R&RD being used and what information needs may exist that are not being satisfied.
2. Extent of Automation--The need for expanded automation or ADP support must be explicit.
3. Automation Costs versus Benefits--Before applying Automation or ADP support, we must be sure that it will be cost effective, from both the dollar or manpower expenditure.

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4. Best Handling Media--Which storage and handling media is most effective for a given operation; i.e., hard copy, microfilm, computer storage (either real time or batch), etc.

5. Equipment Improvements--what functions or services can be improved through improvements in equipment or addition of new types of equipment.

6. Procedural & Technique Improvements--what functions or services can be improved through technique and procedural changes.

II. There are three basic alternative approaches to providing R&D support in response to the referenced memorandum.

A. Ad-Hoc Improvements--selecting a few of the most critical problem areas and implementing individual correction plans.

1. Advantages

- a. Quickest Response
- b. Lowest Cost
- c. Low Risk
- d. Will Require Fewest Changes

2. Disadvantages

- a. Current Problem Areas May Change
- b. Low Pay-Off in Terms of Future
- c. Minimal Efficiency Improvements
- d. No Provision for Future Improvements

B. Integrated System--studying and establishing requirements followed by the development of a long range plan for the instrumentation and operation of R&D.

1. Advantages

- a. Will provide for long range improvements
- b. Potentially high long term efficiency

2. Disadvantages

- a. Results will not be available for several years
- b. Short term approaches will not be fully integrated
- c. Potentially high long range cost

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C. Hybrid System--Development of a long range plan based on a firm estimate of future requirements, while addressing current problems on a quick fix basis, as an integrated approach.

1. Advantages

- a. Long Range Program with Quick-Fix Emphasis
- b. Modular Approach
- c. Highest Long Term Efficiency

2. Disadvantages

- a. Potentially high long range cost

III. It is recommended that we adopt the hybrid system approach, by conducting a contractual study program to determine cost effective improvements that can be made in the currently non-computerized information handling processes within NFIC, and to develop a modular plan for improving the information handling and control processes within current and projected manpower and cost constraints.

IV. Program control of the above recommended project would be maintained via the appointment of a RED technical program manager who would maintain working level coordination and liaison with R&RD and other affected components, while maintaining technical supervision and monitoring of the selected contractor. The contract proposal solicitations and selection will be based on detailed program objectives and proposal evaluations performed in conjunction with PSG designated personnel. Contractor selection for solicitation of proposals will be based on experience in the fields of Library and Information Sciences. It is anticipated that the project will be conducted as a two phase project taking approximately 15 months to complete. The first phase will address the requirements definition and near term solutions while the second phase will be the development of the long range plan.

V. Your support and concurrence in the above recommendation is essential in achieving an effective program to improve the effectiveness of R&RD. If you have any suggestions as to how to improve or change the recommendations, please feel free to call on me. In order to maintain our R&D schedule it is necessary for us to brief the Executive Director concerning our recommendations by the 17th of September and would appreciate

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your assistance in making it a joint presentation. This means that and R&D personnel should have a dry run briefing for us by 15 September 1970.

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Chief, Research & Engineering Division,
NPIC/TSG

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